

claims 8, 9, 16, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Abe (U.S. Pat. No. 5,511,591); and rejected claims 2, 13, and 20 under 35 U.S.C. §103(a) as being unpatentable over Harada et al. in view of Asano et al. (U.S. Pat. No. 4,974,940). The aforementioned objections and rejections are traversed and reconsideration of the title and claims are respectfully requested in view of the following remarks

The Examiner objected to the title of the invention as not being clearly indicative of the invention to which the claims are directed and suggested a new title. Although Applicants believe that the title of the invention is clearly indicative of the invention, for the purpose of expediting the prosecution of this application, the title has been changed to incorporate the Examiner's suggestions. Therefore, Applicants request the withdrawal of this objection.

The rejection of claims 1, 3-7, 12, 14, and 15 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Harada et al. is respectfully traversed and reconsideration is requested.

Claim 1 is allowable over the cited references in that claim 1 recites a combination of elements including, for example, "forming a seal material at edges of the first substrate after depositing the liquid crystal material." None of the cited references, including Harada et al., singly or in combination, teaches or suggests at least these features of the claimed invention. Accordingly, Applicants respectfully submit that claims 2-11, which depend from claim 1, are allowable over the cited references.

Claim 12 is allowable over the cited references in that claim 12 recites a combination of elements including, for example, "depositing a liquid crystal material on the first orientation film of the first substrate, the liquid crystal material having a viscosity of greater

than 100 mm²/sec.” None of the cited references, including Harada et al., singly or in combination, teaches or suggests at least these features of the claimed invention.

Accordingly, Applicants respectfully submit that claims 13-19, which depend from claim 12, are allowable over the cited references.

The Examiner states “[Harada et al.] deposits high viscosity ferroelectric liquid crystals and heat-treats them to lower their viscosity to the nematic viscosity range, but does not disclose explicit values of the viscosities of the liquid crystal when it is deposited or when it is being heat-treated to compare to the claimed ranges... and ...[Harada et al.] discloses using ferroelectric liquid crystals (FLC) [that are] ...much more viscous than nematic liquid crystals [col. 1, lines 30-34].” The Examiner then takes a teaching from Asano et al. that “...viscosity of a nematic liquid crystal is preferably not higher than 30 cp’ [col. 7, lines 60-62]” and further takes a teaching from the Applicants’ specification at page 9 that “conventional liquid crystal has a viscosity of 20 to 50 mm²/sec’.” The Examiner then concludes “...taken together [these] provide a clear rationale for the examiner to believe that the ferroelectric liquid crystal of [Harada et al.] inherently has a viscosity greater than 100 mm²/sec when deposited, while the heat-treatment causes the liquid crystal to have the same characteristics as material have a (nematic) viscosity of 20 to 50 mm²/sec.” The Examiner further concludes “...even if it were shown not to be an inherent feature, the claimed invention would still be obvious over [Harada et al.], and motivated to deposit FLCs having the claimed viscosity range motivated by [Harada et al.]’s teaching of their increasing use [col. 1, lines 30-42].”

Applicants respectfully submit, however, that the claimed invention is not anticipated by, or rendered obvious in view of, Harada et al.. For example, Applicants respectfully

submit that the ferroelectric liquid crystal of Harada et al. does not inherently have a viscosity greater than $100 \text{ mm}^2/\text{sec}$ when deposited. Applicants respectfully submit there is no reason or motivation found in either the cited references or in the knowledge generally available to one of ordinary skill in the art required to imply that the various viscosities of liquid crystal material in the references cited above by the Examiner equal the viscosity exhibited by the nematic phase attained by re-heating the deposited ferroelectric liquid crystal of Harada et al. Assuming, *arguendo*, that the viscosity of the re-heated ferroelectric liquid crystal material of Harada et al. exhibited a nematic phase having a viscosity, disclosed by Asano et al., of not higher than 30 cp, Applicants respectfully submit it is not inherent that the viscosity of the as deposited ferroelectric liquid crystal of Harada et al. is greater than $100 \text{ mm}^2/\text{sec}$. While the viscosity of the as deposited ferroelectric liquid crystal of Harada et al. may be greater than the viscosity of the re-heated ferroelectric liquid crystal, Applicants respectfully submit that the as deposited viscosity is not inherently greater than $100 \text{ mm}^2/\text{sec}$. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. See MPEP § 2112.

Applicants further submit it is not obvious that the as deposited ferroelectric liquid crystal of Harada et al. has a viscosity greater than $100 \text{ mm}^2/\text{sec}$. Applicants respectfully submit that no proper motivation or suggestion is found in either explicitly or implicitly in Harada et al., either singly or in combination, for one of ordinary skill in the art to arrive at the claimed invention. Rather, such combination is suggested only by the claimed invention which is considered impermissible hindsight reconstruction.

The rejection of claims 10, 11, 18, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Kim et al. is respectfully traversed and reconsideration is requested.

Claims 10 and 11 include all of the limitations of claim 1 as discussed above, and Harada et al. fails to teach or suggest at least the features of independent claim 1 as recited above. Similarly, Kim et al. fails to cure the deficiencies of Harada et al. Accordingly, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness regarding claims 10 and 11 in view of claim 1, as above.

Claims 18 and 19 include all of the limitations of claim 12 as discussed above, and Harada et al. fails to teach or suggest at least the features of independent claim 12 as recited above. Similarly, Kim et al. fails to cure the deficiencies of Harada et al. Accordingly, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness regarding claims 18 and 19 in view of claim 12, as above.

The rejection of claims 8, 9, 16, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Abe is respectfully traversed and reconsideration is requested.

Claims 8 and 9 include all of the limitations of claim 1 as discussed above, and Harada et al. fails to teach or suggest at least the features of independent claim 1 as recited above. Similarly, Abe fails to cure the deficiencies of Harada et al. Accordingly, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness regarding claims 8 and 9 in view of claim 1, as above.

Claims 16 and 17 include all of the limitations of claim 12 as discussed above, and Harada et al. fails to teach or suggest at least the features of independent claim 12 as recited

above. Similarly, Abe fails to cure the deficiencies of Harada et al. Accordingly, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness regarding claims 16 and 17 in view of claim 12, as above.

The rejection of claims 2, 13, and 20 under 35 U.S.C. §103(a) as being unpatentable over Harada et al. in view of Asano et al. is respectfully traversed and reconsideration is requested.

Claim 2 includes all of the limitations of claim 1 as discussed above, and Harada et al. fails to teach or suggest at least the features of independent claim 1 as recited above. Similarly, Asano et al. fails to cure the deficiencies of Harada et al. Accordingly, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness regarding claim 2 in view of claim 1, as above.

Claim 13 includes all of the limitations of claim 12 as discussed above, and Harada et al. fails to teach or suggest at least the features of independent claim 12 as recited above. Similarly, Asano et al. fails to cure the deficiencies of Harada et al. Accordingly, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness regarding claim 13 in view of claim 12, as above..

Claim 20 is allowable over the cited references in that claim 20 recites a combination of elements including, for example, “depositing a liquid crystal material on the first orientation film of the first substrate, the liquid crystal material having a viscosity of greater than 100 mm²/sec.” None of the cited references, including Harada et al., singly or in combination, teaches or suggests at least these features of the claimed invention. Accordingly, Applicants respectfully submit that claim 20 is allowable over the cited

references. Applicants further submit that similar arguments presented above with respect to claim 12 are also applicable to claim 20.

Applicants believe the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited. Should the Examiner deem that a telephone conference would further the prosecution of this application, the Examiner is invited to call the undersigned attorney at (202) 496-7500.

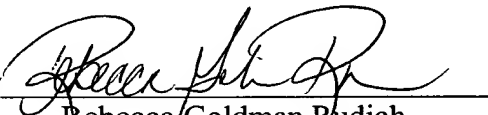
If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136. Please credit any overpayment to deposit Account No. 50-0911.

Respectfully submitted,

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MARKED UP VERSION OF THE AMENDED TITLE

METHOD OF FABRICATING LIQUID CRYSTAL PANEL BY ARRANGING
HIGH VISCOSITY LIQUID CRYSTAL ONTO A SUBSTRATE

MARKED UP VERSION OF THE AMENDED CLAIM

1 (TWICE AMENDED). A fabricating method for a liquid crystal display panel comprising:

- providing first and second substrates;
- forming first and second orientation films on the first and second substrates, respectively;
- depositing a liquid crystal material on the first orientation film of the substrate, wherein the deposited liquid crystal material has a viscosity greater than about 20 to 50 mm^2/sec ;
- forming a seal material at edges of the first substrate after depositing the liquid crystal material; and
- attaching the first and second substrates.